4-10-1985

The Human Powered Car

Letis I. Coak
Indiana University - Purdue University Fort Wayne

THE HUMAN POWERED CAR

A Senior Design Final Report

Prepared for

Professor Donald J. McAleece

Department of Mechanical Engineering Technology

Indiana University-Purdue University at Fort Wayne

by

Letis I. Coak

April 10, 1985

The Human Powered Car is a four-wheeled, two passenger recreational vehicle, designed to provide an alternative to bicycle riding. This report presents a complete description of the design, calculations, drawings, fabrication details, evaluation and cost analysis of the Human Powered Car.

TABLE OF CONTENTS

TABLE OF FIGURES

INFORMATIVE ABSTRACT

I designed the Human Powered Car because I was interested in a recreational vehicle that had more stability than a bicycle. This car is less expensive to produce and maintain than an automobile. The four-wheeled vehicle is made from rectangular steel tubing, round steel stock and bicycle parts. It has a seating capacity for two adults and it has a cargo area.

This report explains the design and analysis of the Human Powered Car. The technical plan of this report is composed of the design solution, fabrication requirements, testing results and cost analysis. The design solution contains the physical description, the components and assemblies, the design criteria and the engineering analysis. I designed and built the full size prototype model. The fabrication requirements section of this report lists the facilities and tools used to assemble the prototype of the Human Powered Car. The testing results prove that the design meets the design criteria. The retail production cost of this car is $415.45. Detailed expenses are listed in the cost table. The appendix contains the computer program, the materials list, the calculations and drawings for the design.